25X1A NRO REVIEW COMPLETED

Handle via [ ] Control System

DISPATCH

CLASSIFICATION: SECRET

USAF REVIEW COMPLETED

PROCESSING		
PRO-POSED	ACTION	ACCOM-PLISHED
	MARKED FOR INDEXING	
	NO INDEXING REQUIRED	
	ONLY QUALIFIED HEADQUARTERS DESK CAN JUDGE INDEXING	
	ABSTRACT	
	MICROFILM	

TO: Chief, OSA

INFO.: Chief, OEL

25X1 FROM: [ ]

SUBJECT: Evaluation of Mincom 490 Tape

25X1A ACTION REQUIRED, REFERENCES:

[ ] /COMMO/LOGS/INTEL

25X1A **Reference:** [ ]

1. In accordance with the request in the above reference, the following evaluation is submitted.

2. Prior to explaining the tests and results obtained at PEC on the Mincom tape, an explanation must be made as to PEC's method of preparing mission tapes for analysis. The tapes are duped at four times speed on an AB_1B_2 rack with the VRO being added during duping.

3. Two sets of test tapes were received from Base, one made on the new Mincom duping system, the other from a test flight. The tape made on the Mincom contained an info sheet stating the following tones were recorded:

200	CPS	5	min.
400	"	5	"
800	"	5	"
1600	"	5	"
3200	"	5	"
1000	"	30	"

4. Tests were made using the A rack, Tektronix scope with free running sweep, and an H.P. counter, counting the saw tooth of the Tektronix.

25X1A [ ] OMMO/LOGS/INTEL

Distribution:
2-Chief, OSA
1-Chief, OEL

V/ RB-OA

DATE APPROVED: 13 Feb 63 | DATE DISPATCHED: 13 Feb 63

DI [ ]

HEADQUARTERS FILE NUMBER

25X1A CROSS REFERENCE TO

Handle via [ ] Control System

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[redacted] COMMO/LOGS/INTEL

25X1A 5. The following readings were made by [redacted] using the tape made on the Mincom equipment.

Reported	Findings
200 CPS	190 CPS
400 "	367 "
800 "	733 "
1 600 "	1 435 "
3 200 "	2 960 "
1 000 "	901 "

The reels were then reversed, placing the unused tape on the take-up reel. Readings were made with the reel size switch in first the large, and then in the small position. The following results were obtained:

Reported	Large	Small
1000 CPS	893 CPS	905 CPS
End of 30 minutes.		
1 000 CPS	863 CPS	880 CPS
3 200 "	2 789 "	2 841 "
1 600 "	1 314 "	1 343 "
800 "	683 "	698 "
400 "	332 "	344 "
200 "	176 "	180 "

PEC have steadily complained of excessive slippage when copying on the AB_1B_2 racks. The above results seemed to confirm their statements. HEPC has never been plagued with these troubles, as the tapes, both originals and copies received from Base are analyzed on C racks, using controlled speed. All tensions on the R.W. equipment were checked and found to be correct by R.W. standards. 25X1A [redacted] then made the following adjustments:

A. All selenoids were adjusted after approximately four hours operations. It was found that, after the selenoids had been in operation for some time, there was a loss of tension. This was more noticeable if the tape was stopped for a few minutes, then started again.

B. The take-up reel torque was changed from 4 ounces to 6 ounces causing the take-up motor to exert more tension on the tape. The supply reel motor was adjusted to 4 ounces torque. The test tape was then re-run, first with the complete tape on the supply reel, then at end of recording the reels were interchanged, placing the practically full reel on the take-up spindle.

25X1A

[redacted] COMMO/LOGS/INTEL

25X1A [redacted]

25X1A

[redacted] COMMO/LOGS/INTEL

The results indicated that there was no evidence of slippage, as same readings were obtained from both tests. The readings were the same as found in the first test before any adjustments were made. Tests were made with both hot and cold equipment with no change in results and no
25X1A evidence of slippage at any time. There was a large difference in the tones reported by Base and with [redacted]s findings. There also was a large amount of noise and flutter on the tape made on the Mincom.

6. The tapes from the test flight were then tested, first separately, then the tapes were spliced together, making approximately six hours of test tape available. During the tests it was found that the tape drive motor on the master recorder was slowing down after approximately two hours of running. The reference tone on the master was recorded at a very low level, making it difficult to measure. Several tests were made under all conditions with only nine cycles difference between the start of reel and the end. Controlled tape speed was not used at any time during tests. The IKC reference tone measured 999 at start of reel and 990 at end of six hours tape. The portion of the master tape with the change in frequency of the reference tone was placed in the center of the reel so as not to affect the readings. The same tests were then made at 4 times speed with a change from start to finish of 13 cycles. As can be seen this is only a change of 1.3% after six hours operation. Both the R.W. and Ampex tek. rep. were quite surprised at the results.

25X1

7. The same tests were made using a [redacted]nission tape with practically the same results; i.e. little or no slippage.

8. If Headquarters decides to use the new tape, all R.W. duping equipment should be adjusted in accordance to the findings made at PEC. Due to the excellent lubricating features of the Mincom tape, all heads, both recording and playback, should last longer.

9. It is requested that the following actions be taken before a final decision is made.

A. Request Base to make another test flight of at least four hours long, using the new tape and forwarding the tape to PEC. PEC will forward the results of tests as soon as possible.

B. Request that Base be instructed to increase the recording level of the reference tone on both recorders.

C. Request that another test tape be made on the Mincom, with the recorded tones accurately controlled by use of a counter.

D. Request that Base be instructed to make an alignment tape on an airborne unit, recording IKC on channel 1 for 30 minutes, channel 2 for 30 minutes and channel 3 for the same period of time. PEC will use this tape as a standard to align all heads on the playback equipment.

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[redacted] COMMO/LOGS/INTEL

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25X1A CONTINUATION OF DISPATCH	CLASSIFICATION: SECRET	DISPATCH SYMBOL AND NO.: [redacted]

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[redacted]/COMMO/LOGS/INTEL

10. If Base has no further use for the R.W. duping equipment, request it be shipped to PEC as soon as possible. With this equipment installed in PEC the "time in hours" of all System VI missions will be reduced by approximately four hours.

25X1A [redacted]

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FORM 10-57 53a (40)	USE PREVIOUS EDITION. REPLACES FORMS 51-28, 51-28A AND 51-29 WHICH ARE OBSOLETE.	CLASSIFICATION: SECRET	☐ CONTINUED	PAGE NO. 4